Energy-Recovery Ventilation System

Service Manual

GREE ELECTRIC APPLIANCES INC. OF ZHUHAI

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PRODUCT

1 MODELS LIST

Model	Air Flow (m^3/h)		External Static Pressure (Pa)		Power Supply	Appearance
FHBQ-D3.5-K	H	350	H	100	220V 50Hz~	
	M	260	M	80		
	L	210	L	60		
FHBQ-D5-K	H	500	H	100		
	M	380	M	80		
	L	300	L	60		
FHBQ-D8-K	H	800	H	110		
	M	600	M	85		
	L	480	L	65		
FHBQ-D10-K	H	1000	H	110		
	M	750	M	85		
	L	600	L	65		
FHBQ-D15-M	1500		150		380V3N~ 50Hz	
FHBQ-D20-M	2000		150		380V3N~ 50Hz	
FHBQ-D30-M	3000		220		380V3N~ 50Hz	

2 NOMENCLATURE

FH	B	Q	-	D	3.5	-	K
1	2	3		4	5		6

NO.	Description	Options
1	The symbol of energy recovery ventilation	/
2	The structure of heat exchanger	board
3	The diathermanous mode	Total heat exchange
4	The mode of installation	Celling mounted type
5	Nominal Air Flow	3.5:350m^3/h； 5:500 m^3/h； …… ； 30:3000 m^3/h
6	The phase of power supply	K: single-phase； M:three- phase

3 FEATURES

3.1 Description

Our living environments are more and more affected by modern civilization. As the application of air-conditioning system and various composite materials, popularization of office equipments and development of closeness of constructions and for the purpose of energy saving and reduction of cost which cause decrease of fresh air volume, harmful gas and pollution of creature won't be diluted properly and replaced. Healthy, energy-saving, simple and reliable fresh-air system and equipment has been the focus for engineers and users. Gree energy recovery ventilation system has solved this problem. This kind of system has two-way air exchange function so that the change of indoor temp is little during air exchange. The indoor air can be efficiently filtered by the air filter. New technology and
new materials and special technique applied in the unit can ensure low energy consumption, great performance ,low noise and easy installation.

3.2 Standard Features

1). Replacement and Ventilation Function

It introduces fresh air into room and discharges indoor airout of room to make you feel comfortable as in the nature.

2). Energy-recovery Function

Internal heat exchanger makes the discharged air and introduced air for cooling and heating exchange. Energy-recovery rate above 70% keeps heat preservation and ventilation realized.

3). Low-noise Design

Special low-noise ventilation fan is set.

4). Air Filtration and Purge Function

Internal air filter keeps the fresh air introduced into room pure and dustless.

5). Various Series and Multiple Specifications

There are various series to match with the buildings of various structures.

4 PRODUCT DATA

4.1 Product Data at Rated Condition

Model:FHBQ-D_			3.5	5	8	10	15	20	30
Power Supply			220V 50Hz				380V 3N~ 50Hz		
Air Flow (m^3/h)		H	350	500	800	1000	1500	2000	3000
		M	260	380	600	750			
		L	210	300	480	600			
External Static Pressure (Pa)		H	100	100	110	110	150	150	220
		M	80	80	85	85			
		L	60	60	65	65			
Temperature Exchanging Efficiency (%)		H	71	68	70	75	73	71	70
		M	73	70	72	77			
		L	75	72	74	79			
Enthalpy Exchanging Efficiency (%)	Heating	H	65	62	63	66	65	62	62
		M	67	64	65	68			
		L	68	65	67	70			
	Cooling	H	61	57	60	62	60	58	58
		M	63	59	62	64			
		L	65	61	64	65			
Wiring Connections	Quantity		3				5		
	Area	mm2	1.0				1.5		
Power Input		W	165	262	400	440	600	950	2800
Operating Sound		dB(A)	37	39	45	46	48	50	54
Dimension(mm)		Height	306	306	380	380	452	452	572
		Width	800	800	832	832	1210	1210	1340
		Depth	879	879	1016	1016	1215	1215	1550
Net Weight		kg	45	45	70	70	100	100	240

Note：

1．The models of 220v power supply type has 3types of fan speed and the models of 380v have one fan speed.

2．The temperature exchange efficiency and enthalpy exchange efficiency are tested under these testing conditions as below:

（1）Cooling efficiency:Indoor air 27 ℃DB, 20℃WB,outdoor temperature 35℃DB, 29℃WB。

（2）Heating efficiency:20 ℃DB,14℃WB 。Outdoor air temperature: 5 ℃DB, 2℃WB 。

3．Sound power level according to ISO 5151-sound pressure calculated at 1m distance.

4．Operation condition:ambient temperature-15℃-50℃，relevate humidity less than 80％RH.

4.2 Electrical Data

Model	Power Supply	Fan Motor	Max. Fuse Breaker Size	Min. Disconnect Size
	V，Ph，Hz	FLA Each	Amperes	Amperes
FHBQ-D3.5-K	220V~ 50Hz	0.76A×2	2.47A	1.71A
FHBQ-D5-K		0.76A×2	2.47A	1.71A
FHBQ-D8-K		1.0A×2	3.25A	2.25A
FHBQ-D10-K		1.0A×2	3.25A	2.25A
FHBQ-D15-M	380V 3N~ 50Hz	1.4A×2	4.55A	3.15A
FHBQ-D20-M		1.4A×2	4.55A	3.15A
FHBQ-D30-M		4.2A×2	13.65A	9.45A

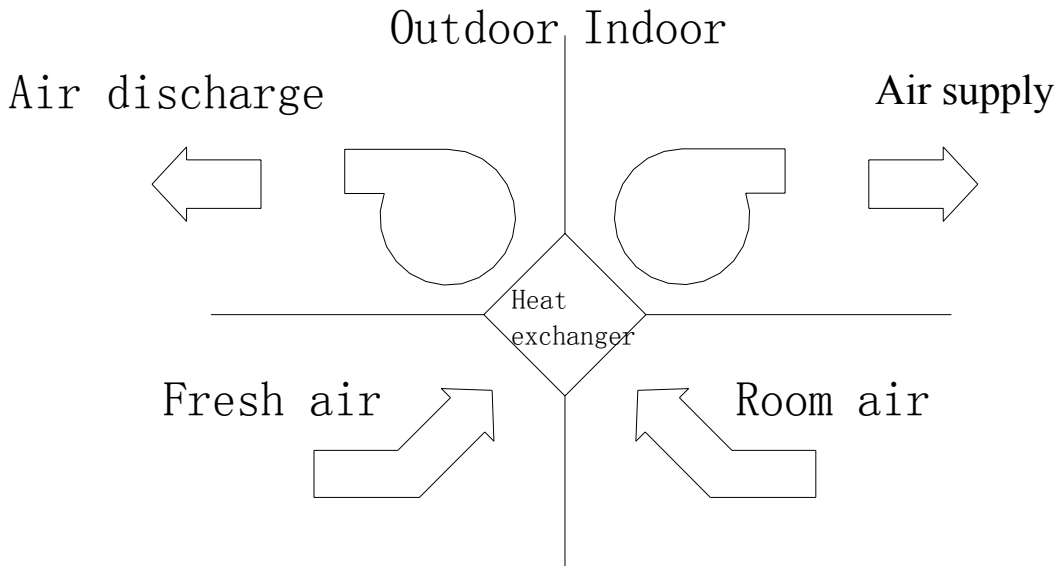
Notes：

RLA：Rated load amperes

LRA：Locked rotor amperes

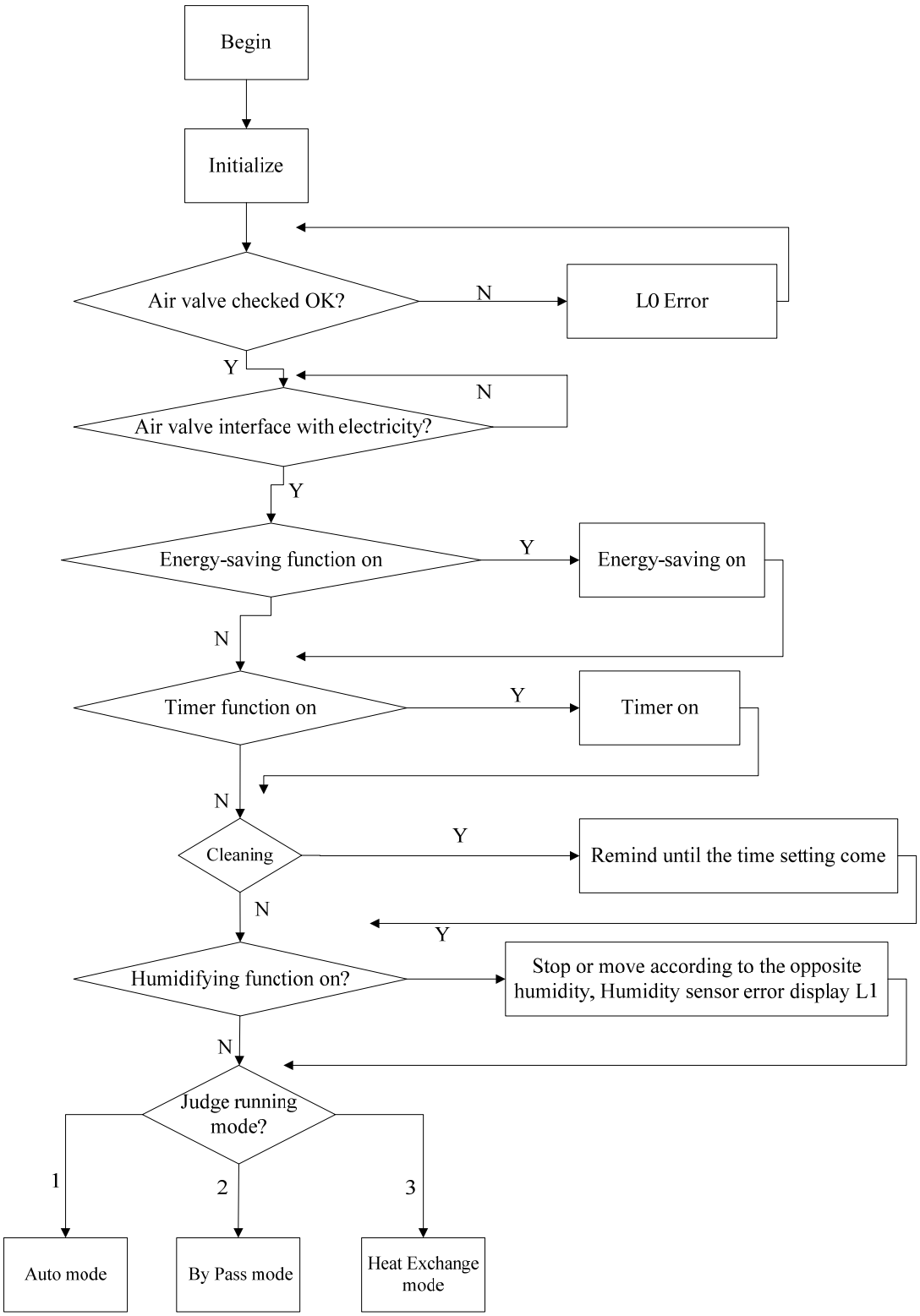
FLA：Full load current

5 PIPING DIAGRAM



CONTROL

1 OPERATION FLOWCHART



2 MAIN LOGIC

2.1 Auto mode

Detect the temperature indoor and outdoor for durative a period of time

①The system will operate under by pass mode according to temperature and temperature difference between room and outdoors is little in transient season

The system will operate as such request:

By Pass air valve opens, the air discharge fan and air supply fan will operate according to setting fan speed.

②The system will operate under heat exchange mode according to temperature and temperature difference between room and outdoors is large in transient season

The system will operate as such request:

By Pass air valve closes, the air discharge fan and air supply fan will operate according to setting fan speed.

③The system will operate according to the primary mode before the system was off.

2.2 By Pass mode

Under By pass mode, air valve is open.

The system will operate as such request:

If the air valve is close，the air discharge fan and air supply fan will stop. When the air valve is open , the fan will operate according to setting fan speed .

2.3 Heat Exchange mode

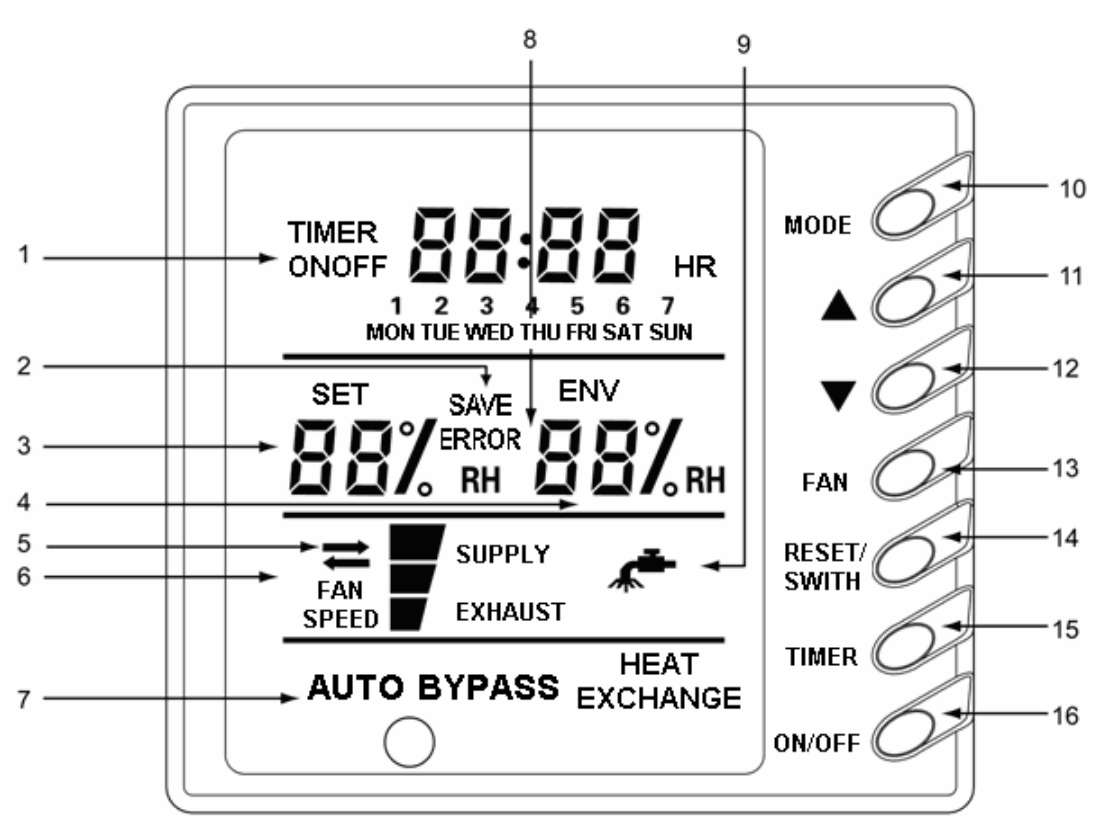
Under Heat Exchange mode, the air valve is close

The system will operate as such request:

Electrify the air valve motor, judge the position of the air valve. The air discharge fan and air supply fan will stop if the air valve is open, or they will operate according to setting fan speed .

3 WIRED REMOTE CONTROLLER

3.1 Operation View



Front panel of wired controller

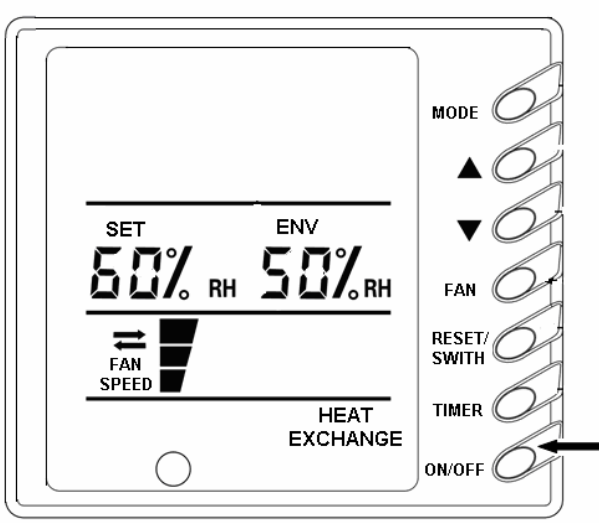
Constitution of wired controller			
1	Timer display	10	Mode button
2	Energy-saving status display	11	Setting humidity increase button
3	Setting humidity display	12	Setting humidity decrease button
4	Ambient humidity display	13	Fan speed button
5	Air exchange mode (half-half air exchange ,discharge and supply) *	14	Reset/Switch button
6	Fan speed display (high, mid, low) *	15	Timer button
7	Mode(auto, by-pass, heat exchange)	16	On/Off button
8	Error status display		
9	Cleaning status of filter display		

Notice: For FHBQ-D15-M and FHBQ-D20-M, there is no air discharge and supply function in Item 5 and the fan speed in Item 6 is unadjustable;For FHBQ-D30-M,there is no wired controller.

3.2 Display View

1） Turn On / Off the Unit

Press ON/OFF button to start the unit.
Press ON/OFF button once again to stop the unit.

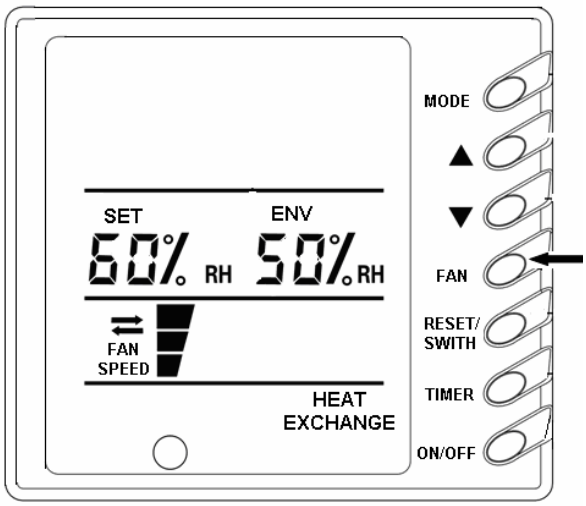


2）Fan Speed Control

(The figure is about relative display area , the same as below)
During half-half air exchange, with each press of FAN button, the fan speed will change in the following order:

→Low→Mid.→High→

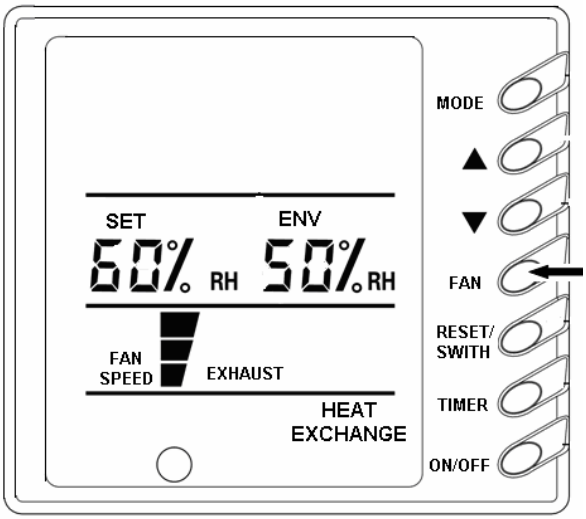
Note: No change to fan speed of FHBQ-D15-M and FHBQ-D20-M during control



During air discharge and air supply, with each press of FAN button, the fan speed with switch between high speed and low speed.

→Low→High→

Note:No this function for FHBQ-D15-M and FHBQ-D20-M during control.



3）Humidity Adjustment

If there is humidifying function in the unit, press humidify button:

▲：Used to increase setting humidity.

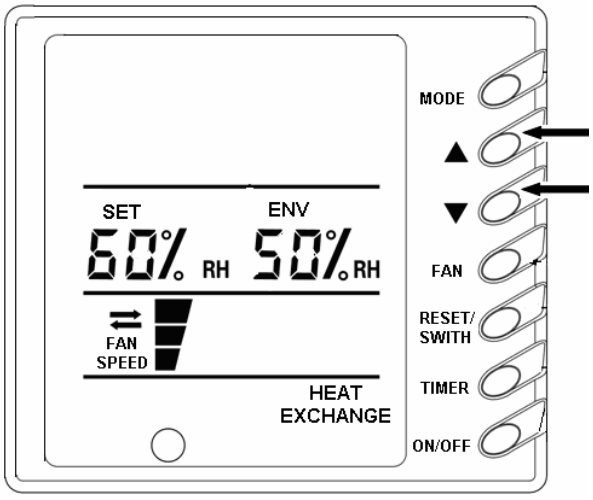
▼：Used to decrease setting humidity.

Once press of this button, the temperature will increase or decrease by 5%.

Note：Lock function: Pressing ▲ and ▼ simultaneously for 5s, the place of setting humidity will display **EE** and all response to the buttons will be shielded. And then press ▲ and ▼ simultaneously for 5s to release Lock Function.

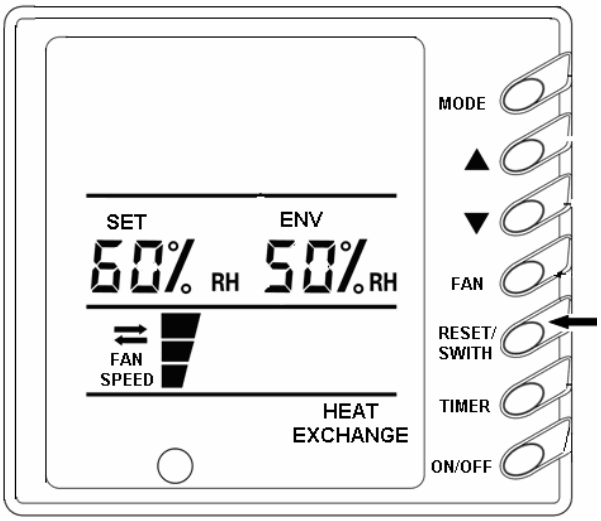
When long-distance monitoring or centralized control shield displayer, the signals of buttons and from remote controller will be shielded, and CC will be displayed in the place of setting humidity.

Setting range of humidity: 40%～60%RH



4）Reset/ Switch Function Setting

Not having pressed Timer button, long press Reset/ Switch button for 5s to clear operation time and icon. After pressing of Timer button: Under On status of the unit: short press Reset/ Switch button to switch among Timer off setting, Energy saving startup setting,Energy saving stop setting and Clear time setting.



5）Running Mode Setting

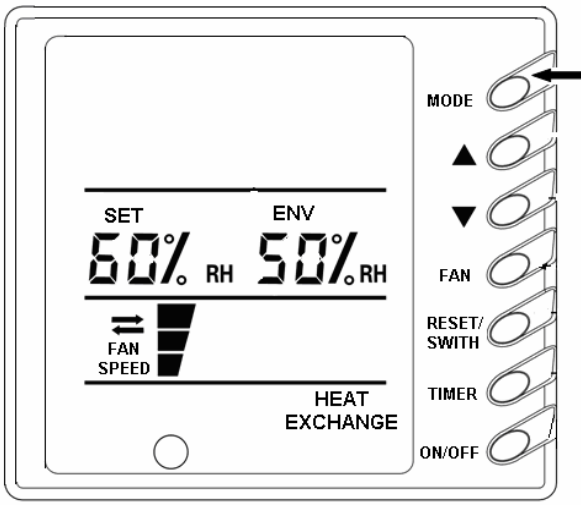
Each press of this button, the operation mode will change as follow,

┌→Auto→By pass →Heat exchange┐

└──────────────────────┘

Under Auto mode, the letter of Auto will light, so the system will operate according to temperature and temperature difference between room and outdoors.

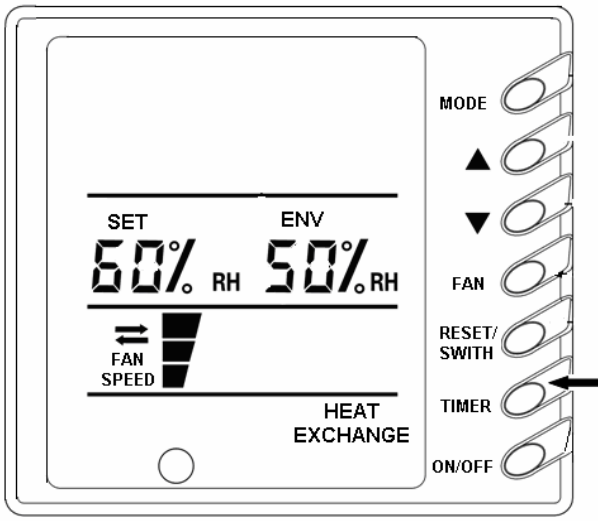
Under By pass mode, the letter of By Pass will light, so the fan will operate according to setting Fan mode and fan speed. Make this mode operate in transient



season to prolong service life of the core of heat exchanger.

Under Heat Exchange mode, the letter of Heat Exchange will light. After shutdown of air valve, the fan will operate according to setting fan mode and fan speed. Under this mode, the total heat exchange of temperature and humidity can be realized along with exchange of fresh air, which is energy saving and healthy.

6）Timer Setting



In off status of the unit, timer on can be set and in on status, timer off, energy-saving on and energy –saving off and air clear can be set. Press Timer button into timer setting status. TIMER,Hr and letters corresponding setting will blink.

(E.g. during timer off setting, Timer,Hr and OFF will flash).In this case, the user can press ▲or ▼to increase or decrease setting time. Repress Timer button to make the timer valid and the timing will be calculated after that. When the unit is under timer state, press theTimer button to cancel it. The time interval is 0.5 hr.

The setting range of Timer on/off is 0.5-24hr.

The setting range of Energy Saving On is 2-5hr and the default is 2hr.

The setting range of Energy Saving Off is 1-4hr and the default is 1hr. (Note: press FAN and ▼ at the same time for 5s only after energy saving timer setting, the energy saving function can operate.

The setting range of Timer Clear is 1250hr, 2500hr and 00000.The default is 1250hr.

7）Ambient Temp Display

Under normal state, only indoor ambient humidity is display at ENV.

Notice: The humidifying function with the unit can be valid after it is started.

8）Humidifying ON/OFF Display

Press MODE and ▼at the same time for 5s to switch between humidifying ON/OFF.

Note:The unit with humidifying function can normally run. The indoor humidity and setting humidity can be displayed only If this function is on. The default is OFF. It is recommended to ON in dry period. The fittings are optional.

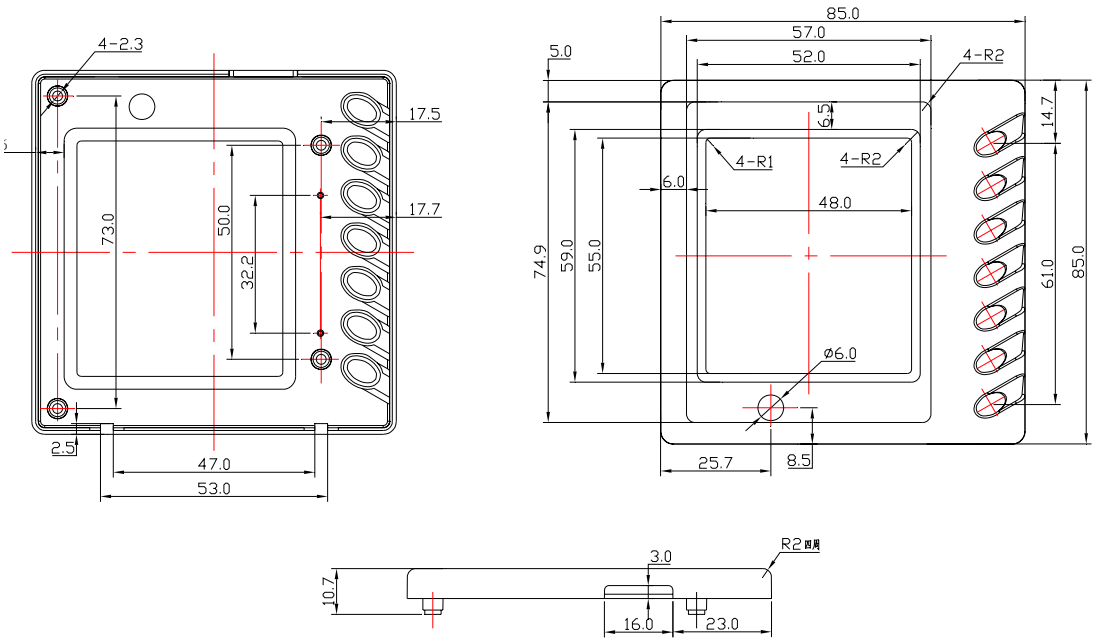
9）Fan Mode Display

Press FAN and ▲ at the same time for 5s to switch among half-half air exchange, discharge and supply. The fan mode is selected by the users. E.g. plus pressure is needed in the room, fan mode can be adopted and if negative pressure is needed, air discharge mode can be adopted. Half-half air exchange is for normal station.

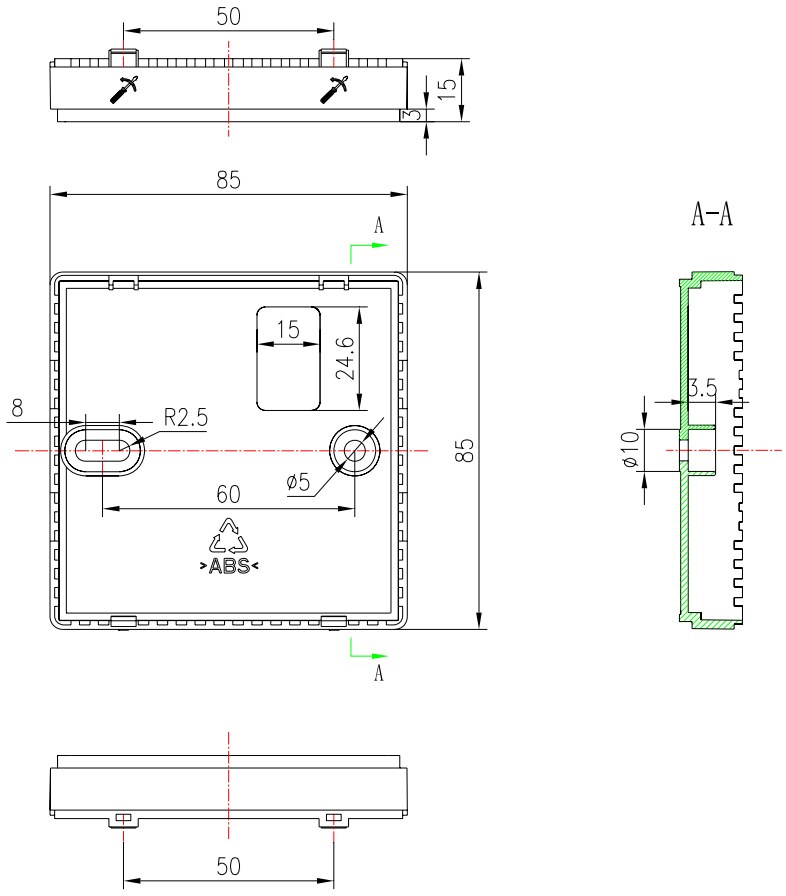
10）Energy Saving Mode Display

Press FAN and ▼ at the same time for 5s to switch between energy saving on/off. If under energy saving on state, Energy Saving will be displayed. If the unit needn’t operate for a long time, energy saving mode can be adopted to meet the demands of both function of fresh air exchange and quality of indoor air by users.

3.3 Dimension



Panel Dimension and Installation Dimension

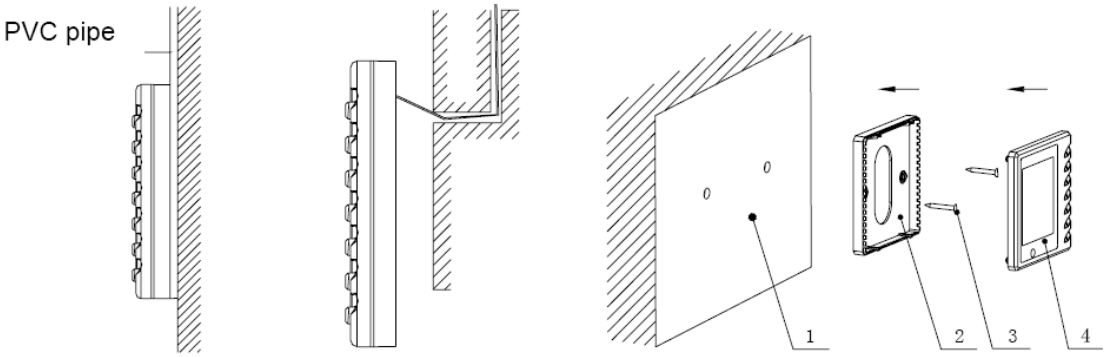


Bottom Panel Dimension and Installation Dimension

3.4 Installation

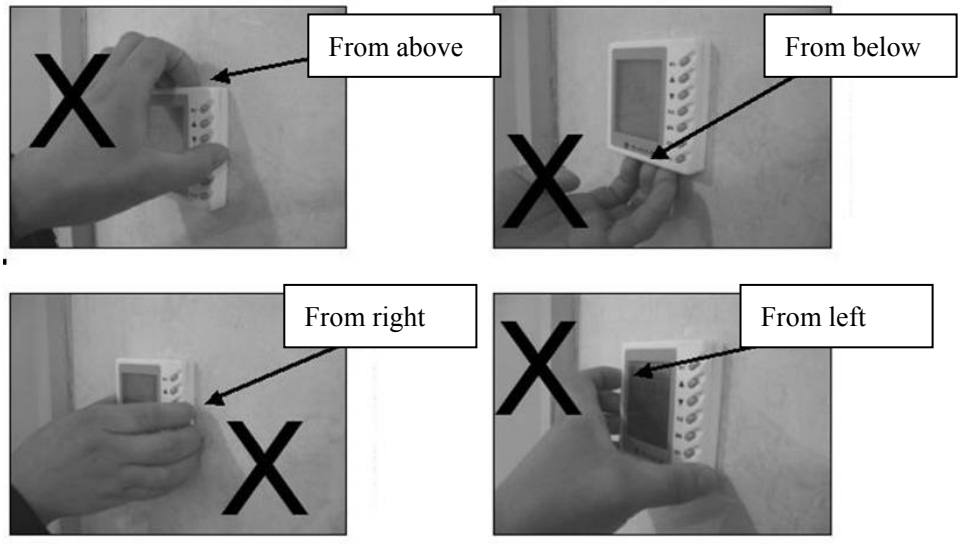
1. Locate the installation position firstly, and then reserve a groove or hole for embedding of communication wire according to its dimension.
2. If wired controller and indoor communication wire are mounted visibly, 1＃PVC pipe can be used and corresponding grooves should be set in the wall. If in hidden, 1＃PVC pipe can be used.
3.Whether mounted visibly or in hidden, drill two holes (keep level) in the wall as the distance （60mm） between the two holes in underplate of wired controller, and then inset stopper into the holes through which the wired controller can be fixed. Insert communication wire in the control board. At last, clasp the controller panel.

Note: During installation of underplate of wired controller, pay attention to its direction. The side with 2 breaches must be kept downwards.



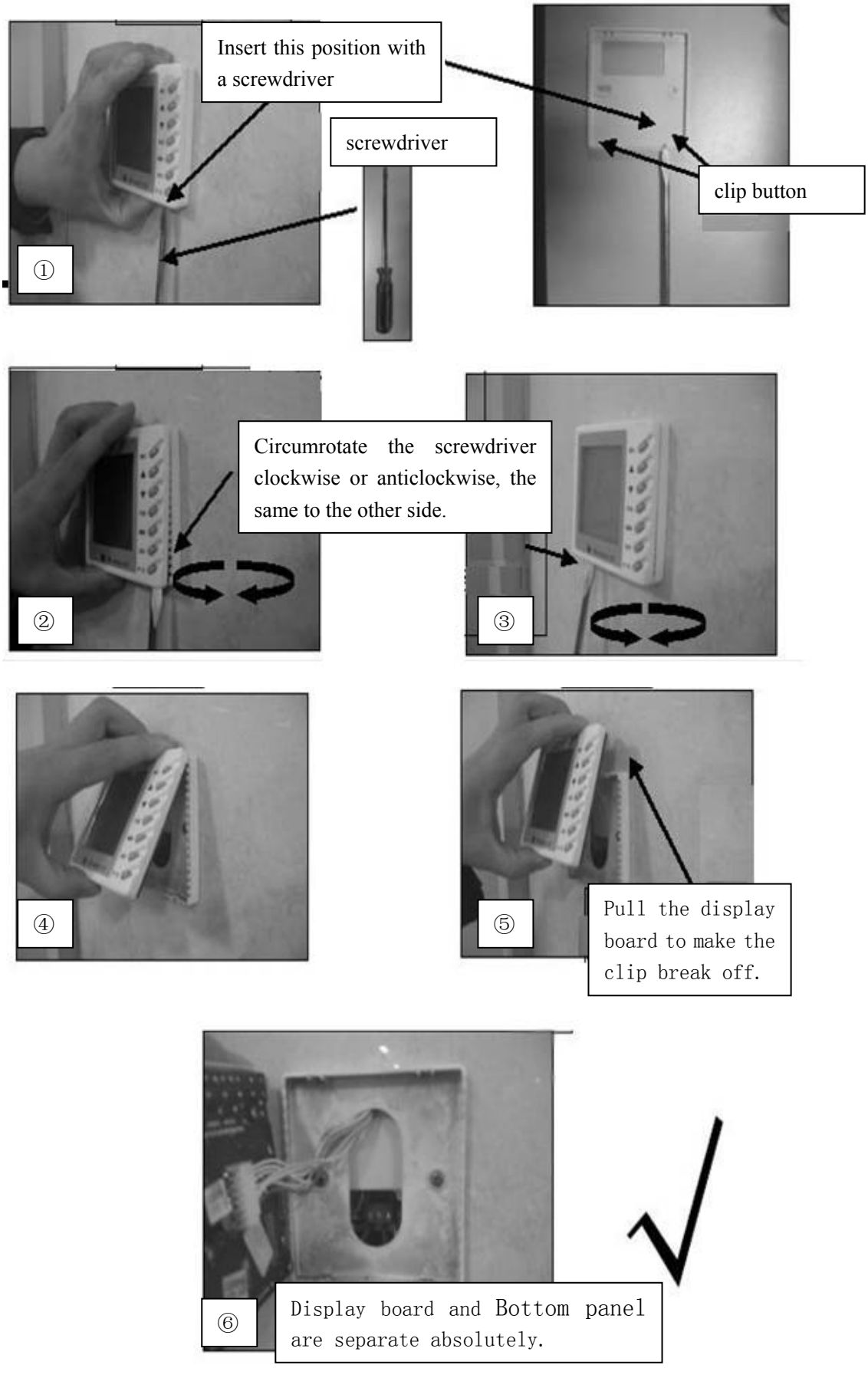
No.	Name	The appearance of the controller should be subject to entity.
1	Wall	
2	Underplate of wire controller	
3	Screw M4X10	
4	Controller panel	

We must not tear down the panel in these wrong ways as:



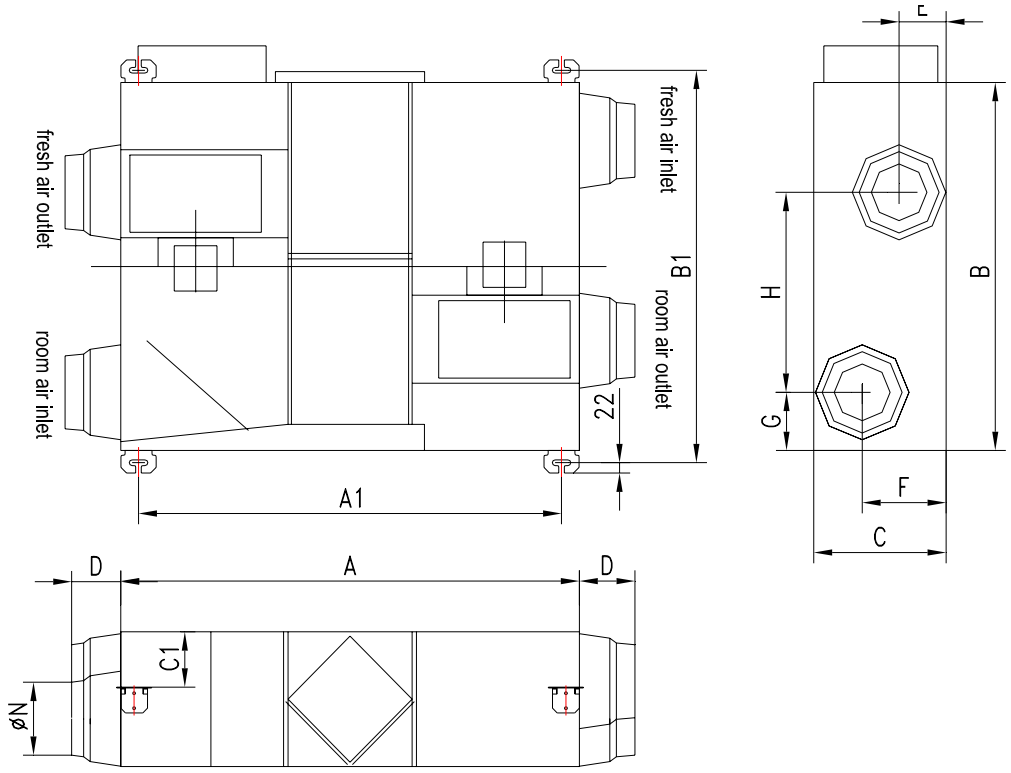
When you want to check the panel ,you need use a screwdriver to tear down it like

this:


Insert this position with a screwdriver
screwdriver
clip button
①
Circumrotate the screwdriver clockwise or anticlockwise, the same to the other side.
②
③
④
⑤
Pull the display board to make the clip break off.
⑥
Display board and Bottom panel are separate absolutely.

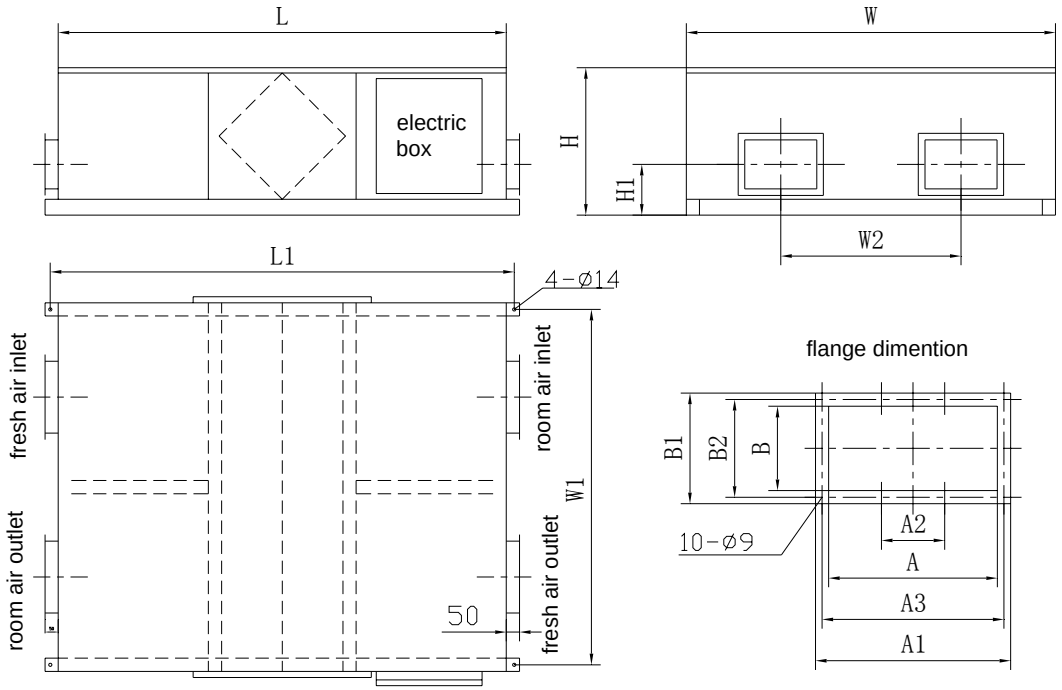
INSTALLATION

1 DIMENSION DATA



Uint： mm

Model	A	A1	B	B1	C	C1	D	E	F	G	H	N
FHBQ-D3.5-K	879	823	800	852	306	125	90	125	175	136	416	197
FHBQ-D5-K	879	823	800	852	306	125	90	125	175	136	416	197
FHBQ-D8-K	1016	960	832	884	380	165	90	150	230	155	372	246
FHBQ-D10-K	1016	960	832	884	380	165	90	150	230	155	372	246
FHBQ-D15-M	1215	1159	1210	1262	452	200	100	190	277	178	737	297
FHBQ-D20-M	1215	1159	1210	1262	452	200	100	190	277	178	737	297



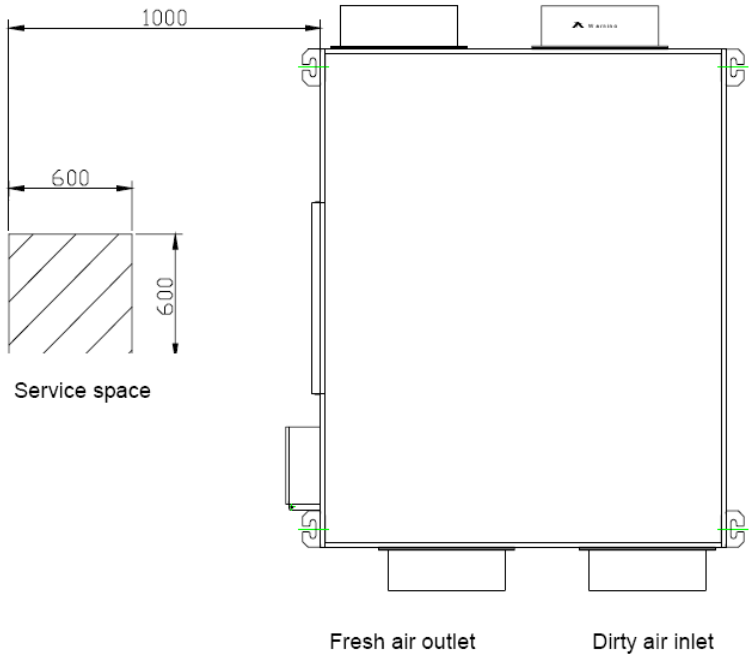
Uint： mm

Model	L	L1	W	W1	W2	H	H1	A	A1	A2	A3	B	B1	B2
FHBQ-D30-M	1550	1650	1340	1310	670	572	249	346	386	180	366	332	372	352

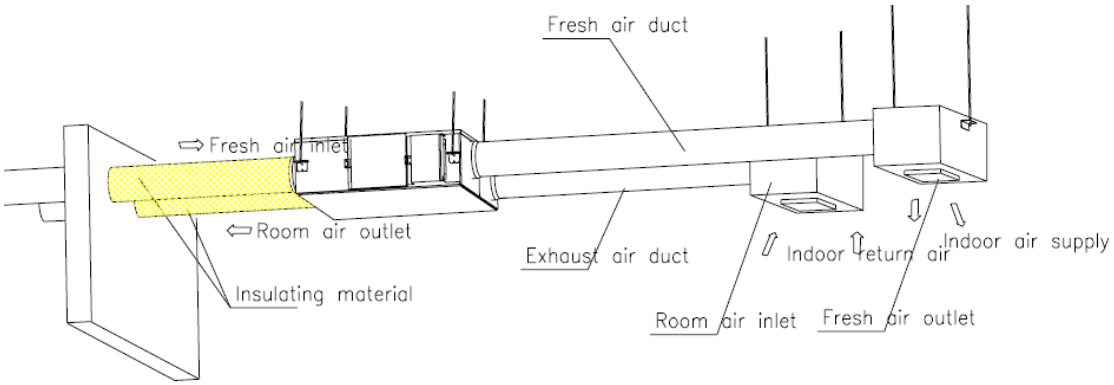
2 INSTALLATION SITE

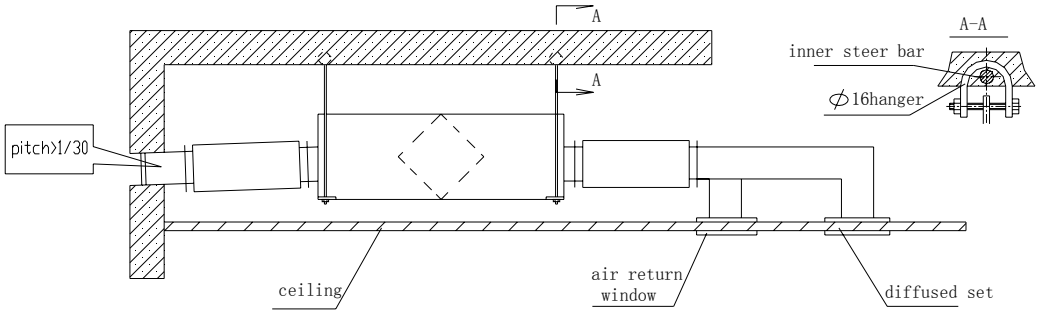
During installation, the two ducts (fresh air inlet and indoor air outlet) outside the room must be installed with anti-condensate and heat insulating materials, and the ones inside the room should also be installed with them if temperature and humidity in the ceiling is high. The ducts outside the room should be kept inclined 1/50~1/30 to avoid water into room.

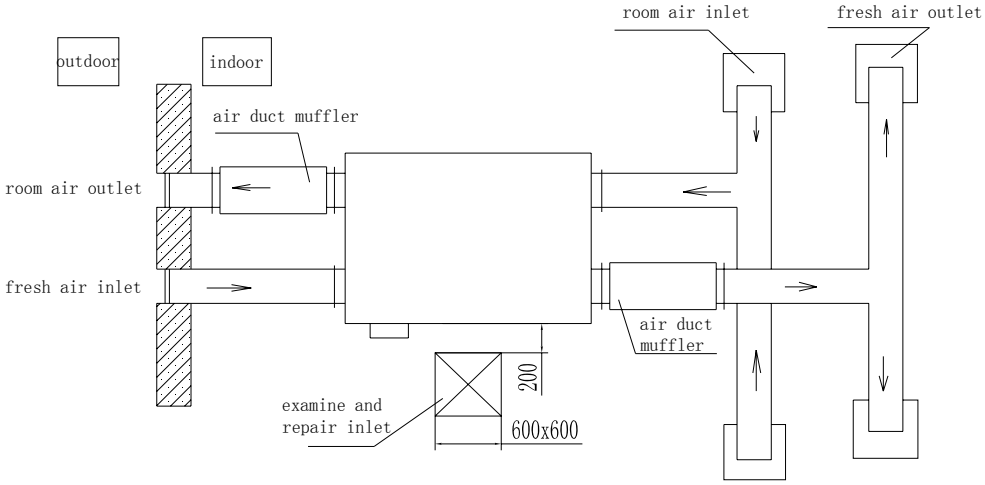
In order to clean and maintain the filter and heat exchanger core in the system, do keep service space, as shown in the fig..



3 UNIT INSTALL







4 CAUTIONS FOR INSTALLATION

1． Never lay wires, cables and pipes with toxic, inflammable or explosive gas or liquid in the duct.

2． The dismountable ports and adjustable parts of duct and fittings can not be installed in the wall or floorslab.

3． The sundries and filth in or on the duct and fittings should be cleaned before installation.

4． The construction of bracket or hanger of the duct should accord with the following specifications:

1） The build-in fitting, setting nail or expansion bolt for bracket or hanger should be placed correctly and firmly .The inlet part should be free of oil soil and painting.

2） The layout of the bracket or hanger should accord with design specifications. If there is no design specification, following specifications will apply.

a． Pole bracket or inclined bracket is applicable for horizontal duct against wall or pole and

support bracket for that far from wall or pole. Strip hanger is applicable for the duct with diameter or length of side below 400mm.

b． Arm bracket or inclined bracket is applicable for vetical duct against wall or pole and anchor ear bracket for that far from wall or pole .The vertical pipe outside the room or on the roof should be fixed with derrick or dragline.

3）The hanger's rod should be flat and its screw thread should be full and smooth. Either threaded connection or welding is suitable for joint of hangers. If the former one is adopted, connecting thread of either end should be longer than diameter of hanger; moreover, anti-loosing measure should be made. If the later one is adopted, lapping joint is applicable and its length should be 6 times longer than diameter of hanger at least at two sides.

4） The holes on the bracket and hanger should be drilled mechanically and not with gas cutting.

5． The bracket and hanger can not set at air vent, valve or service door. The hanger can not be directly fixed at flange. The distance between horizontal duct bracket and hanger can not exceed 4m.If the duct is installed vertically, the distance between them should not exceed 4m and the built-in fittings of each vertical duct should be more than 2 pieces.

6．The duct flange, hanger and hanger for equipment should be coated with anticorrosion paint.

7． The floor plate and wall which the duct passes should be repaired after construction. The holes on the external wall should be kept 2/100 gradient at level direction (the internal is higher) to avoid rainwater into the room.

8． Installation of duct and connection between air vent and duct should be firm. The frame and decorative surface should be solid, external surface should be level and indeformable and adjustment should be flexible.

5 ELECTRIC WIRING WORK

5.1 Wiring Principle

1. Layout of Wires

1) Layout of wires should accord with national wiring criteria.
2) The power supply must be with rated voltage and special for AC.
3) The power supply should be reliable to prevent terminals from being stressed. Never pull the power cord forcibly.
4) The line width of power cord must be large enough. Replace the broken power cord or connecting wire with special cable.
5) All of the electric installation must be performed by professionals according to local laws and regulations and instructions.
6) The earthing wire should be reliably connected with special earthing device and be performs by professionals.
7) Air switch and leakage switch which can cut off the general power supply should be installed.
8) The air switch should integrate the functions of magnetic release and hot release to protect it for short circuit or overload.

The field wiring should be subject to circuit diagram attached on the unit.

2. Earthing Requirements

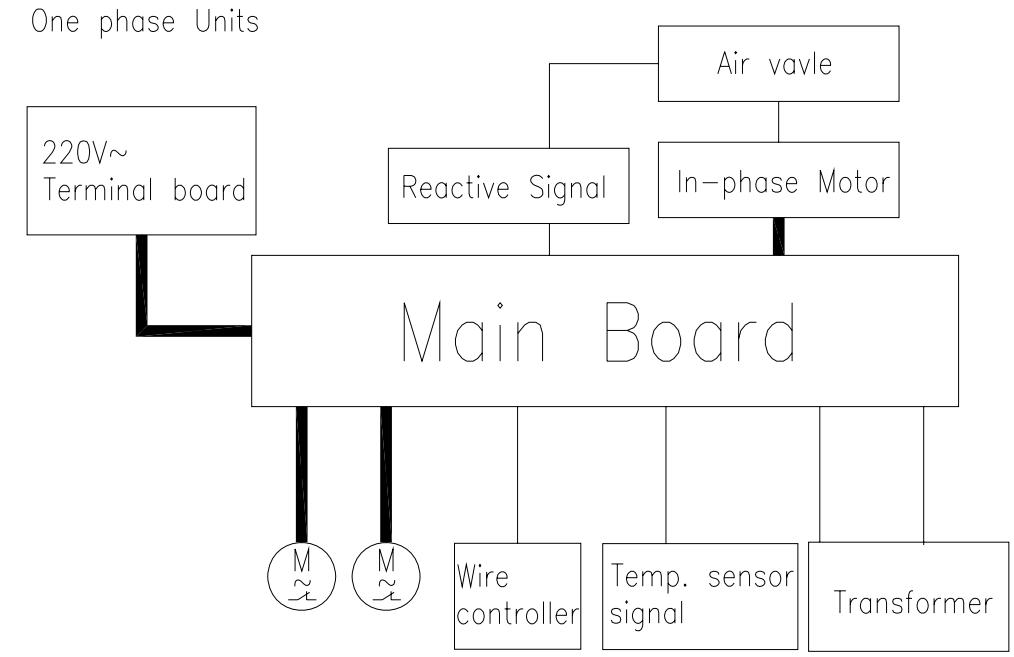
1) Reliable earthing measure must be adopted. The yellow green earthing wire with the only use

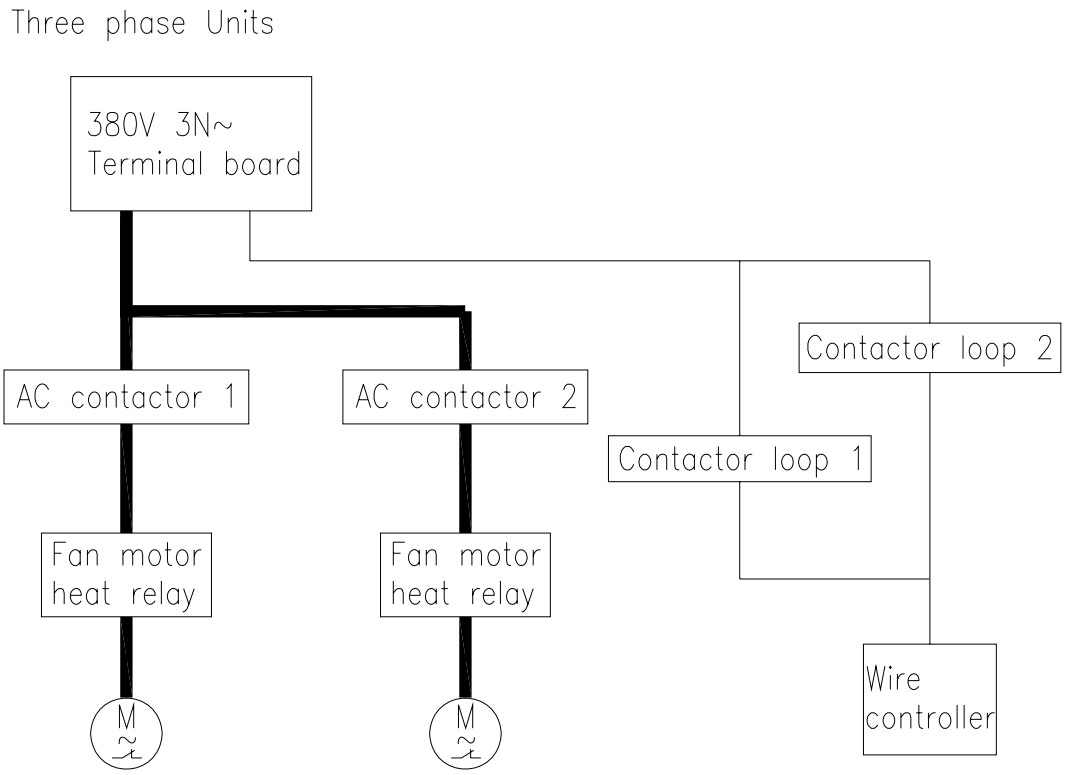
never can be cut off and fixed with tapping screws to avoid electric shock.

2) Earthing resistance should be accord with the criteria.

3) Power supply must be reliably earthed. The earthing wire can not connect with:
a.Tap water pipe; b. Gas pipe; c. Blowing tube; d. Place which specialist considers unreliable.

5.2 Electric Wiring Design





5.3 Specification of Power Supply Wire and Air Switch

Applied models	Power supply	Capacity of air switch （A）	Min.sectional area of earthing wire （mm^2）	Min. sectional area of power cord （mm^2）
FHBQ-D3.5-K	220V～,50Hz	6	1.0	1.0
FHBQ-D5-K	220V～,50Hz	6	1.0	1.0
FHBQ-D8-K	220V～,50Hz	6	1.0	1.0
FHBQ-D10-K	220V～,50Hz	6	1.0	1.0
FHBQ-D15-M	380V 3N～,50Hz	6	1.0	1.0
FHBQ-D20-M	380V 3N～,50Hz	6	1.0	1.0
FHBQ-D30-M	380V 3N～,50Hz	6	1.0	1.0

Note:

a. The power cord of the unit must be copper cored cable, and working temp can not exceed specified value.

b. Increase the sectional area of power cord above 15 meters to avoid overload.

MAINTENANCE

1 TROUBLE TABLE

Error	Error Code	Logic
Communication error	E6	Communication between the main board and the wire remote controller is in trouble.
Indoor temp sensor error	F0	Something is wrong with temp sensor or the temperature is overstep the range of the temp sensor.
Humidity sensor error	L1	Humidity sensor is not connected or communication is in trouble.
Outdoor temp sensor error	F3	Something is wrong with temp sensor or the temperature is overstep the range of the temp sensor.
Air valve and relevant fitting error or wrong connection of centralized control wiring of air valve	L0	By-pass door and drive structure of the unit loose

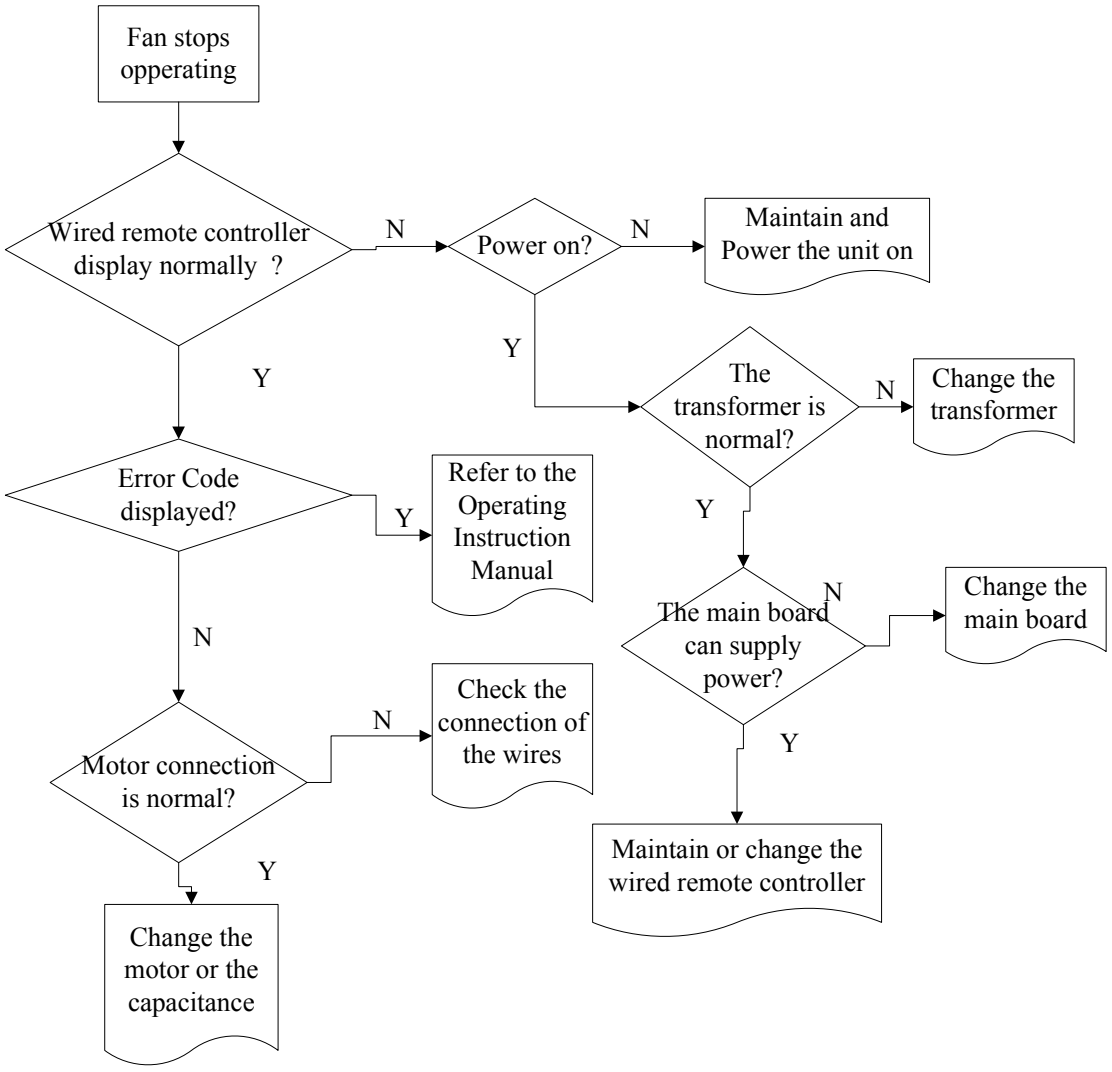
Fault Diagnose

After debugging and trial run, the unit can be normally used by the user. If any fault occurs, remove it firstly by yourself according to the following table before you contact us.

No.	Phenomenon	Possible causes	Solutions
1	Airflow volume at air outlet/inlet is obviously decreased after a period of time.	Too much dust gathers on the air filter	Replace or clean air filter
2	Noise occurs at air vent	Installation of air vent is loose	Re-fix the collecting place of air vent
3	The system can not be started	No power supply or power cord is incorrectly connected Terminals of main board transformer are loose Communication fault (E6) Air valve and relative fittings are faulted（L0） The centralized controller of air valve of main board is not connected （L0）	Repair the power supply and check power cord according Repair the power supply and check power cord according to circuit diagram on the unit; Re-insert and connect transformer terminals; Check the connecting wire between displayer and main board; Check by-pass door and drive structure of the unit and fix it;

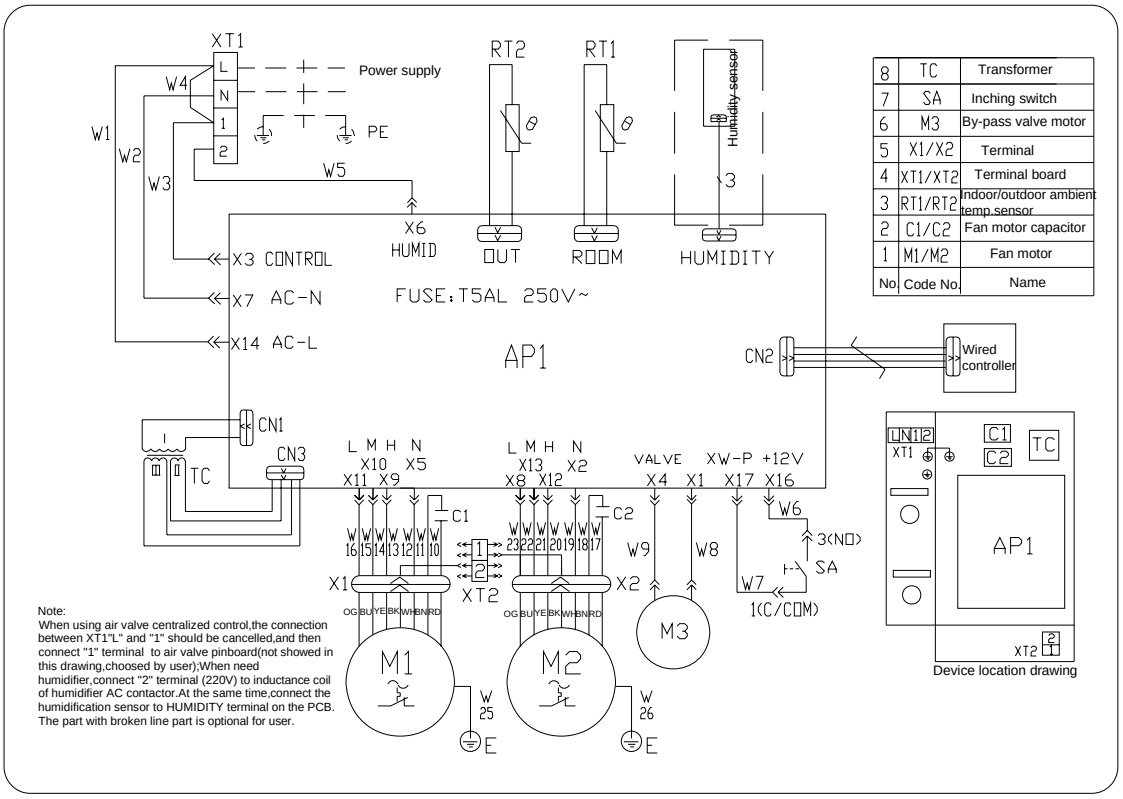
			Connect CONTROPL port of main board with live line or pinboard of air valve
4	There is not air from indoor or outdoor vent after opening the switch	1. No power supply or power cord is incorrectly connected. 2. Control wire is not or incorrectly connected	1. Check power and power supply 2. Check the connecting line between operational box and main unit.
5	Normal air in or out from outdoor vent but small air volume from indoor vent	Leakage of indoor duct	Find out the leaking place and seal it
6	There is a little air from indoor or outdoor vent	Phase sequence of 3-phase power supply is wrong and fan of the unit reverses	Adjust the phase sequence

2 FLOW CHART OF TROUBLE SHOOTING



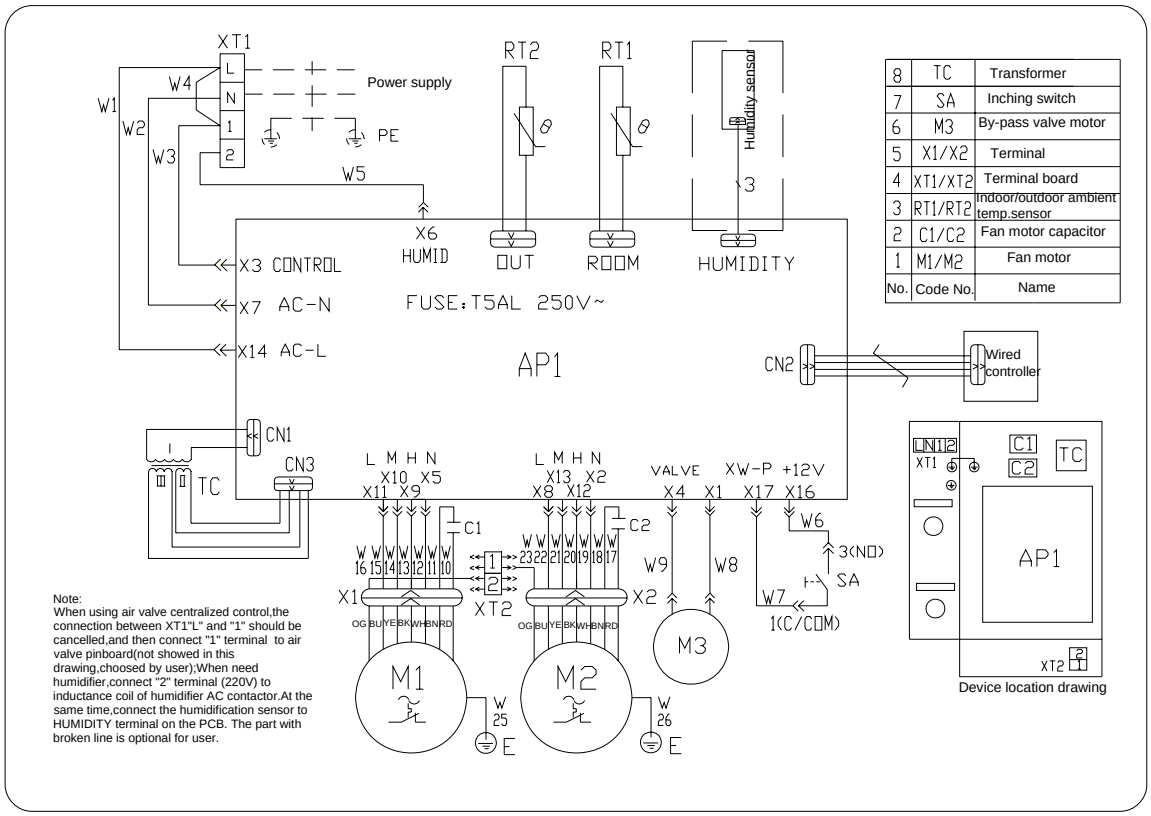
3 WIRING DIADRAM

1) Model:FHBQ-D3.5-K、FHBQ-D8-K、FHBQ-D10-K



No.	Code No.	Name
8	TC	Transformer
7	SA	Inching switch
6	M3	By-pass valve motor
5	X1/X2	Terminal
4	XT1/XT2	Terminal board
3	RT1/RT2	Indoor/outdoor ambient temp.sensor
2	C1/C2	Fan motor capacitor
1	M1/M2	Fan motor

2) Model:FHBQ-D5-K



No.	Code No.	Name
8	TC	Transformer
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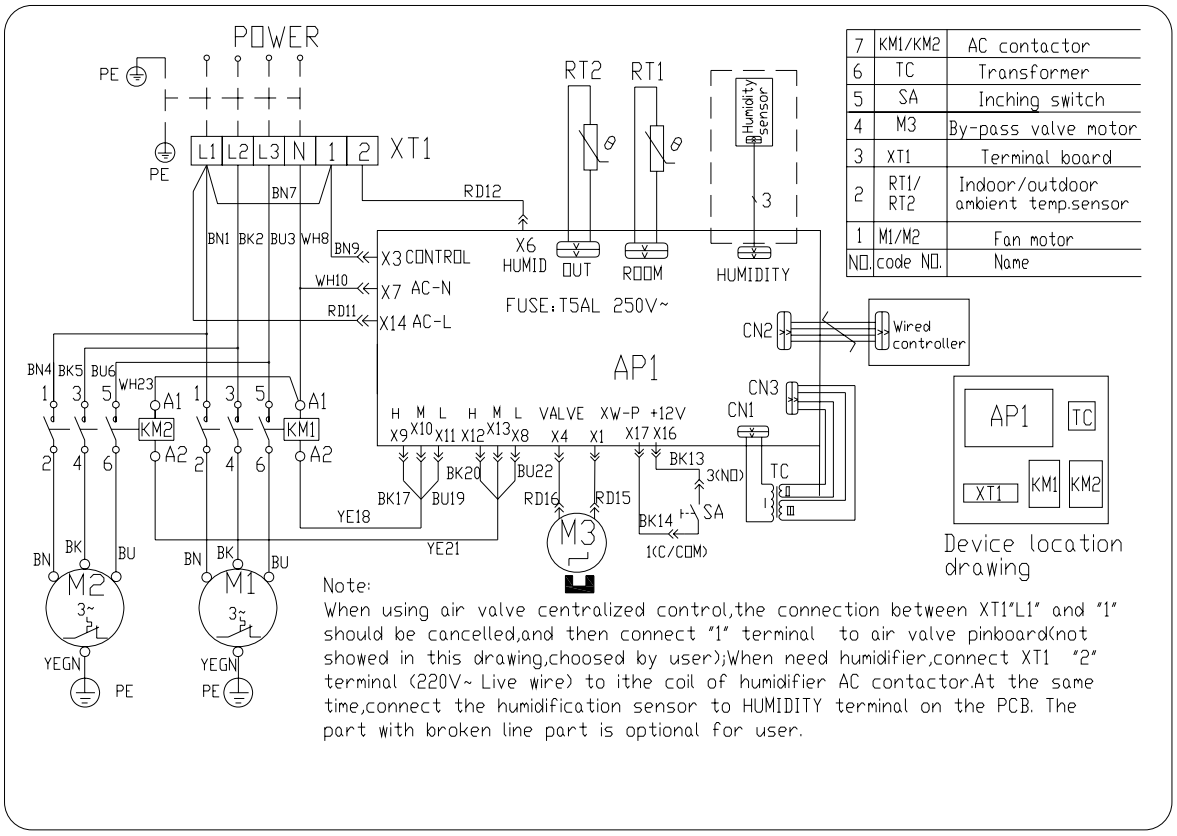
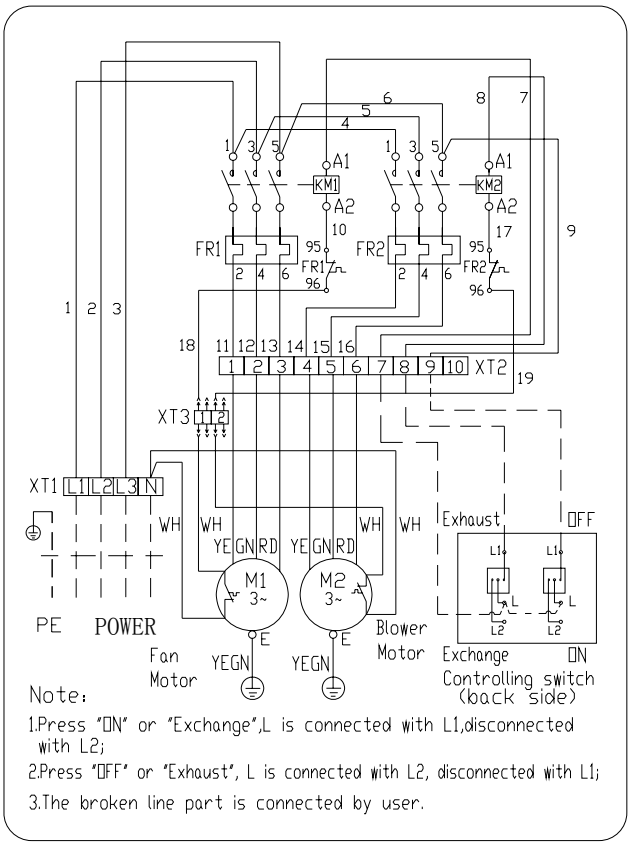
4	XT1/XT2	Terminal board
3	RT1/RT2	Indoor/outdoor ambient temp.sensor
2	C1/C2	Fan motor capacitor
1	M1/M2	Fan motor

3) Model:FHBQ-D15-M、FHBQ-D20-M


POWER
PE
L1 L2 L3 N 1 2 XT1
RT2 RT1
Humidity sensor
RD12
BN7
BN1 BK2 BU3 WH8 BN9 X3 CONTROL
WH10 X7 AC-N
RD11 X14 AC-L
X6 HUMID OUT ROOM HUMIDITY
FUSE:T5AL 250V~
AP1
CN2 Wired controller
CN3
CN1
BN4 BK5 BU6 WH23
KM2 KM1
H M L H M L VALVE XW-P +12V
X9 X10 X11 X12 X13 X8 X4 X1 X17 X16
BK20 BU22 BK17 BU19 YE18 YE21 RD16 RD15
BK13 3(NO) TC SA BK14 1(C/COM)
M2 M1 M3
BN BK BU
YEGN PE
Note:
When using air valve centralized control,the connection between XT1"L1" and "1" should be cancelled,and then connect "1" terminal to air valve pinboard(not showed in this drawing,choosed by user);When need humidifier,connect XT1 "2" terminal (220V~ Live wire) to ithe coil of humidifier AC contactor.At the same time,connect the humidification sensor to HUMIDITY terminal on the PCB. The part with broken line part is optional for user.
AP1 TC XT1 KM1 KM2
Device location drawing

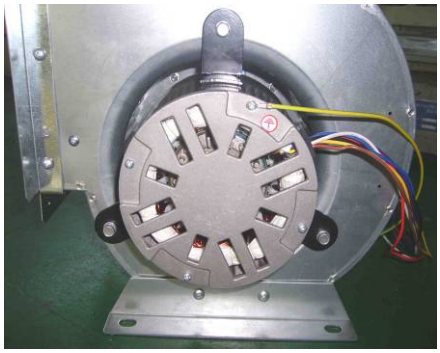
7	KM1/KM2	AC contactor
6	TC	Transformer
5	SA	Inching switch
4	M3	By-pass valve motor
3	XT1	Terminal board
2	RT1/ RT2	Indoor/outdoor ambient temp.sensor
1	M1/M2	Fan motor
NO.	code NO.	Name

4) Model:FHBQ-D30-M

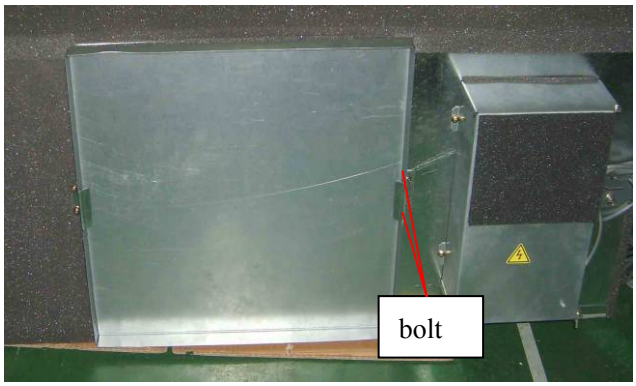
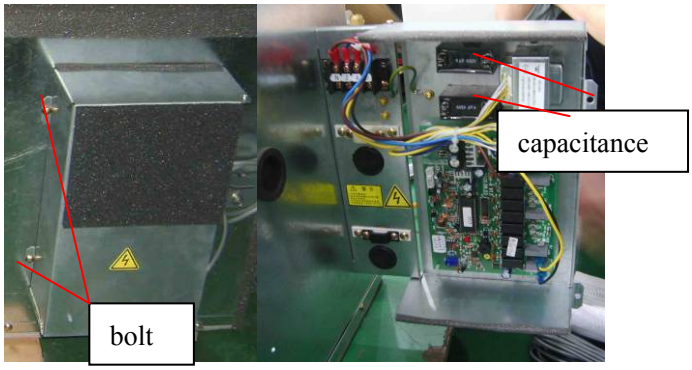

KM1 KM2
FR1 FR2
XT2 XT3 XT1 L1 L2 L3 N
WH YE GN RD
M1 3~ M2 3~
PE POWER
Fan Motor
YEGN
Blower Motor
Exhaust OFF
Exchange ON
Controlling switch (back side)
Note:
1.Press "ON" or "Exchange",L is connected with L1,disconnected with L2;
2.Press "OFF" or "Exhaust", L is connected with L2, disconnected with L1;
3.The broken line part is connected by user.

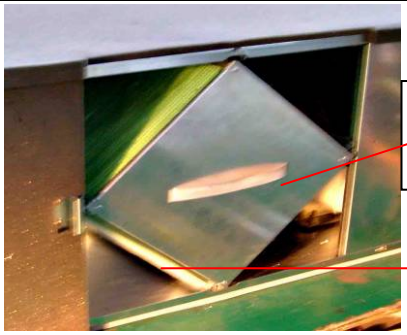
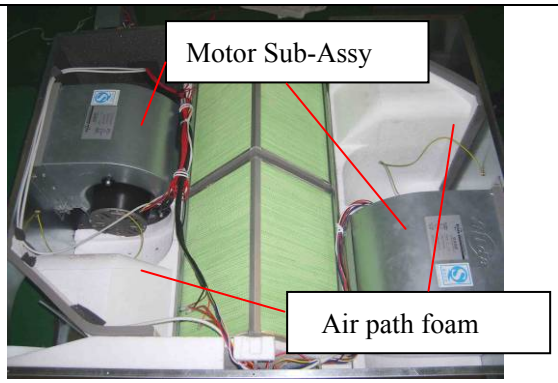
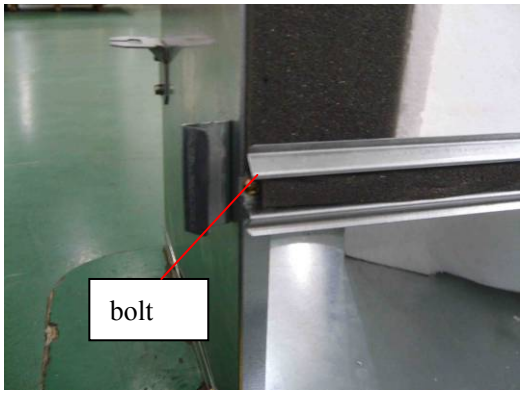
4 DISASSEMBLY AND ASSEMBLY PROCEDURE OF MAIN PARTS

Main parts introduce

Picture	Name	Function
	Acentric Motor Sub-Assy	Make the air flow
	Heat Exchange core	The important Sub-Assy that make the fresh air and room air exchange energy

Main parts dismantle and install

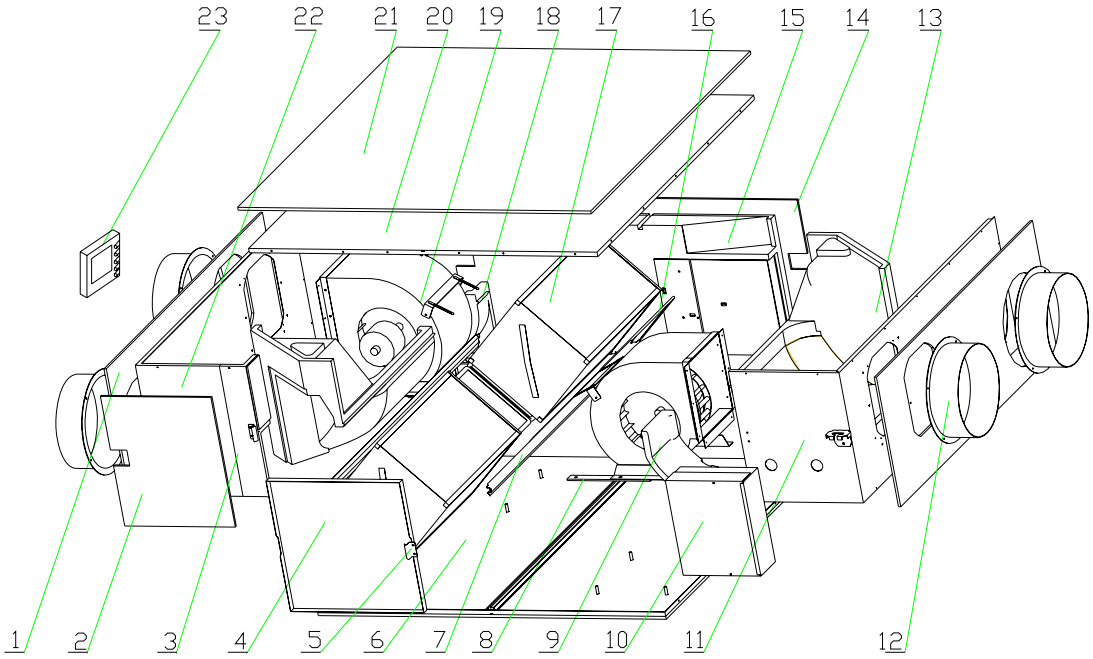
Name： Service door**'s teardown**	Fig. show
Discharge the two bolts on the right of the Service door, and then take down the buckle.	
Name：Electric Box's teardown	Fig. show
Remove the two bolts and then circumgyrate the Electric Box to open it.	

Name ： Change the heat exchange core and filter	Fig. show
After removing the service door，we could be able to take out the core and the filter（The core should be washed by cleaner or other special dust catcher equipments except water）.	
Name ： Motor Sub-Assy's teardown	Fig. show
1，Opening the top cover; Take out the core and the filter beforehand	
2，Remove the bolt as the fig. show and take out the fixing board assy. 3， Take out the air path foam; Disentwine the nut that used to fix the fan and pedestal; Remove the bolt that used to fix the fan and side panel	

5 EXPLODED VIEWS AND PART LIST

1) Model:FHBQ-D3.5-K 、 FHBQ-D5-K 、 FHBQ-D8-K 、 FHBQ-D10-K FHBQ-D15-M 、 FHBQ-D20-M

Exploded View



Parts List

No.	Name	FHBQ-D3.5-K FHBQ-D5-K	
		Num.	Code
1	sponge 1(Left Side Plate)	2	`12208928
2	sponge 2(Left Side Plate)	1	`12208916
3	Assy 2 of Left Side Plate	1	`01318902
4	Assy of overhauling door	1	`01398902
5	Door Holder	1	`02208901
6	Base Plate Assy	1	`01288901
7	Retaining Plate Assy	2	`01848903
8	Rubber Sheet	2	`76718901
9	Foam Assy 3	1	`12319813
10	Electric Box Assy	1	`01396159
11	Sub-assy of Right Side Plate	1	`01311115
12	flange Sub-assy	4	`01491142
13	Foam Assy 1	2	`12319811
14	sponge(Side of Bottom Plate)	1	`12208920
15	By-pass assy	1	`07138901
16	Filter Sub-assy	2	`11128901

17	heat exchanger assy	2	`00908901
18	Foam Assy 2	1	`12319812
19	Motor Sub-Assy	2	`15408901
20	Cover Plate Assy	1	`01268901
21	sponge	1	`1220890103
22	Sub-assy 1 of Left Side Plate	1	`01311116
23	Display board	1	30295007

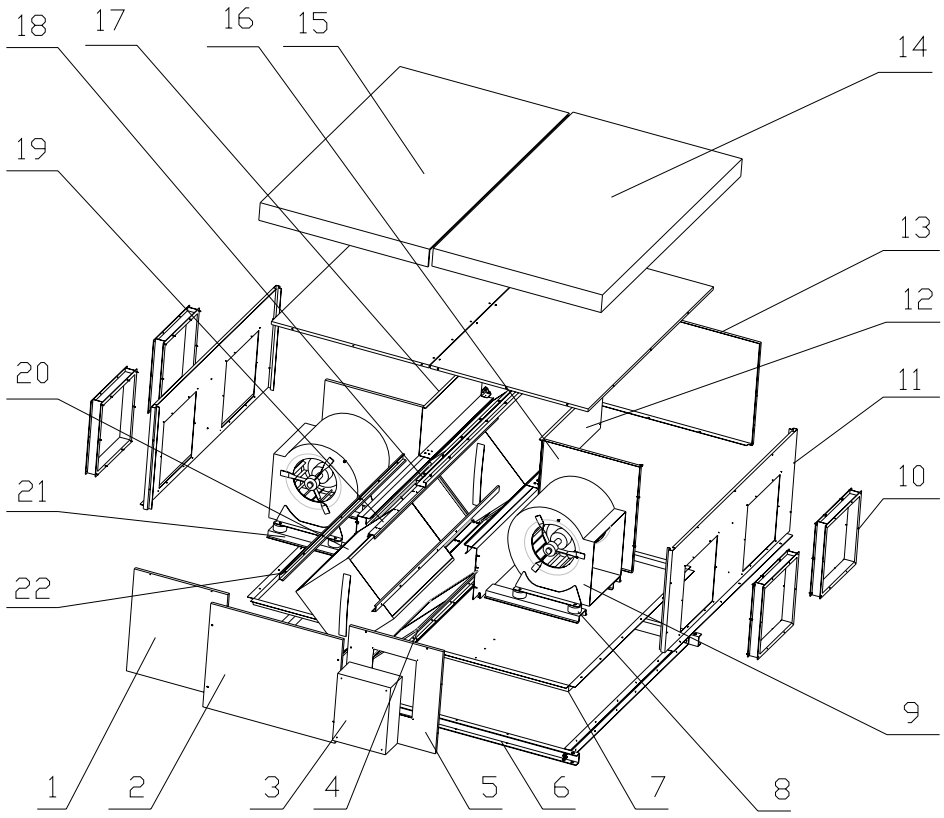
No.	**Name**	**FHBQ-D8-K FHBQ-D10-K**	
		Num.	**Code**
1	sponge 1(Left Side Plate)	2	` 12201137
2	sponge 2(Left Side Plate)	1	` 12201138
3	Assy of Left Side Plate	1	` 01311123
4	Assy of overhauling door	1	` 01391128
5	Door Holder	1	`02208901
6	Base Plate Assy	1	` 02221124
7	Retaining Plate Assy	2	` 01841108
8	Rubber Sheet	2	76718901
9	Foam Assy 3	1	` 12311101
10	Electric Box Assy	1	`01396160
11	Sub-assy of Right Side Plate	1	` 01311125
12	flange Sub-assy	4	`01491139
13	Foam Assy 1	2	` 12311103
14	sponge(Side of Bottom Plate)	1	` 12201141
15	By-pass assy	1	` 04631124
16	Filter Sub-assy	2	1112800101
17	heat exchanger assy	2	` 00901101
18	Foam Assy 2	1	` 12311102
19	Motor Sub-Assy	2	` 15401109
20	Cover Plate Assy	1	` 01261109
21	sponge	1	`1220113504
22	Sub-assy of Left Side Plate	1	`01311116
23	Display board	1	30295007

No.	**Name**	**FHBQ-D15-M FHBQ-D20-M**	
		Num.	**Code**
1	sponge 1(Left Side Plate)	2	` 12201137
2	sponge 2(Left Side Plate)	1	` 12201138
3	Assy of Left Side Plate	1	` 01311123

4	Assy of overhauling door	1	` 01391128
5	Door Holder	1	`02208901
6	Base Plate Assy	1	` 02221124
7	Retaining Plate Assy	2	` 01841108
8	Rubber Sheet	2	76718901
9	Foam Assy 3	1	` 12311101
10	Electric Box Assy	1	`01396160
11	Sub-assy of Right Side Plate	1	` 01311125
12	flange Sub-assy	4	`01491139
13	Foam Assy 1	2	` 12311103
14	sponge(Side of Bottom Plate)	1	` 12201141
15	By-pass assy	1	` 04631124
16	Filter Sub-assy	2	1112800101
17	heat exchanger assy	2	` 00901101
18	Foam Assy 2	1	` 12311102
19	Motor Sub-Assy	2	` 15401109
20	Cover Plate Assy	1	` 01261109
21	sponge	1	`1220113504
22	/	1	`01311116
23	Display board	1	`30295007

Model:FHBQ-D30-M

Exploded View



Parts List

No.	Name	FHBQ-D30-M	
		Num.	Code
1	Front side plate assy 1	1	01398904
2	Assy of overhauling door	1	01318912
3	Electric Box Assy	1	01396168
4	Filter Sub-ass	4	11128001
5	Front side plate assy 2	1	01316080
6	Hanger crossbeam	2	01871226
7	Bottom plate assy	1	02228904
8	Rubber gasket	8	76018401
9	Hanger longeron Sub-assy	2	01871224
10	Acentric motor	2	15706001
11	Air inlet/outlet assy	4	01491143
12	Side plate(air outlet)	2	01318918
13	Clapboard assy 1	1	01248901
14	Back side plate assy	1	01318909
15	Top cover plate 1	1	01268906
16	Top cover plate 2	1	01268907
17	Middle clapboard assy 1	1	01248909
18	Clapboard assy 2	1	01248905
19	Connection plate(top cover)	1	01341105
20	Guide groove(top cover)	1	02281115
21	Heat exchange core	2	49018903
22	Fan retaining rack Sub-assy	2	01848905
23	Guide groove(filter)	1	02281112

PDM 流水号：JF00300198